

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Actions to Accelerate Adoption and)	GN Docket No. 16-46
Accessibility of Broadband-Enabled Health)	
Care Solutions and Advanced Technologies)	
)	

**COMMENTS OF THE
CONSUMER TECHNOLOGY ASSOCIATION**

The Consumer Technology Association (“CTA”)¹ respectfully submits these comments in response to the above-captioned *Public Notice*, which explores how to accelerate the adoption and accessibility of broadband-enabled health and wellness services and technologies.² The *Public Notice* correctly identifies that “health care is being transformed by the availability and accessibility of broadband-enabled services and technologies and the development of life-saving wireless medical devices.”³ The consumer technology industry proudly enables and facilitates this transformation to enhance health and wellbeing for consumers, especially through the increasing deployment of the Internet of Things (“IoT”) and new broadband technologies.

The Commission can advance the interests of consumers by working *with* industry to ensure a sufficient supply of spectrum, taking action to streamline any governmental

¹ The Consumer Technology Association (“CTA”)™ is the trade association representing the \$292 billion U.S. consumer technology industry, which supports more than 15 million U.S. jobs. More than 2,200 companies – 80 percent are small businesses and startups; others are among the world’s best known brands – enjoy the benefits of CTA membership including policy advocacy, market research, technical education, industry promotion, standards development and the fostering of business and strategic relationships. CTA also owns and produces CES® – the world’s gathering place for all who thrive on the business of consumer technologies. Profits from CES are reinvested into CTA’s industry services.

² *FCC Seeks Comment and Data on Actions to Accelerate Adoption and Accessibility of Broadband-Enabled Health Care Solutions and Advanced Technologies*, Public Notice, GN Docket No. 16-46, FCC 17-46 (rel. Apr. 24, 2017) (“*Public Notice*”).

³ *Id.* at 6.

involvement in infrastructure development, and supporting industry efforts to develop user-friendly, private, and secure interactions between users and technologies. Further, CTA’s members are successfully operating within the existing FCC regulatory framework, recently bolstered by the implementation of the Twenty-First Century Communications and Video Accessibility Act (“CVAA”), to make health and wellness solutions accessible to and usable by individuals with disabilities.

I. THE CONSUMER TECHNOLOGY INDUSTRY IS MAKING DRAMATIC ADVANCES IN HEALTH AND WELLNESS TECHNOLOGIES, INCLUDING STANDARDS FOR THESE PRODUCTS

Consumer health and wellness technologies are currently helping to enhance consumers’ lives and health outcomes – and this trend will continue.⁴ Industry is developing voluntary, consensus-based standards to address interoperability, reliability, privacy, security, and other potential concerns.

Trends and Adoption. As the U.S. population ages, traditional caregivers are transitioning to “care recipients ... trigger[ing] a wave of new approaches to aging that call for more proactive senior care services and prevention-driven self-care tools.”⁵ Further, institutional long-term care services cannot meet demand and, even if they could, many seniors want to age in their homes for as long as possible.⁶ CTA’s research indicates that health and wellness applications are already serving the twin goals of reducing unsustainable demand on institutions and keeping seniors in their homes longer. Emerging applications include improved safety monitoring that can prevent seniors from getting lost, monitors that can detect gait changes and

⁴ *Id.* at 14 (*Issue 20*. “We are particularly interested in receiving data and information about health outcomes, return on investment, and the ability to reach such underserved population groups....”).

⁵ CTA, *Active Aging Study*, CTA Report 21 (Mar. 2016), <https://www.cta.tech/Research-Standards/Reports-Studies/Studies/2016/Active-Aging-Study.aspx> (“*Active Aging Study*”).

⁶ *Id.* at 66-68.

thus predict accidental falls, sleep and health monitoring, and remote diagnosis and video conferencing with a doctor.⁷ Connected video and sensor technologies allow caregivers and families to monitor elderly Americans remotely to make sure they are safe, take their pills, or even that they close the front door. Seniors and their caregivers are adopting health and wellness technologies.⁸ This trend will continue, especially as baby boomers – who are more comfortable with using technology to “improve their home living” – age.⁹ Further, when care is needed, health records are increasingly available in electronic form, including on an individual’s mobile device.¹⁰

⁷ *Active Aging* at 22; see also TechnoloJ, *CES 2017: Focused assisting the generation that tech forgot*, Future Health Index (Feb. 8, 2017), <https://www.futurehealthindex.com/2017/02/08/ces-2017-focused-assisting-generation-technology-forgot> (“TechnoloJ, CES 2017”); Dr. Bertalan Mesko, *The 10 Best Health Technology Innovations at CES 2017*, Medical Futurist, <http://medicalfuturist.com/10-best-health-technology-innovations-ces-2017> (last visited May 15, 2017) (“Mesko, CES 2017”); Dan Kendall, *Top Health Technology at CES 2017*, Salus Digital (Jan. 10, 2017), <http://salusdigital.net/top-health-technology-ces-2017-2> (“Kendall, CES 2017”).

⁸ *Public Notice* at 15 (*Issue 15(a)*). “How soon will we see widespread adoption of these technologies and what implications will they have on the spectrum needs of the health care industry?”; *Active Aging Study* at 66-72.

⁹ *Active Aging Study* at 48; see also *id.* at 73.

¹⁰ The U.S. Department of Health and Human Services has instituted the “Blue Button” program, in which the “Blue Button symbol signifies that a site has functionality for customers to go online and download health records.” See HealthIT.gov, About Blue Button, <https://www.healthit.gov/patients-families/blue-button/about-blue-button>; U.S. Department of Health and Human Services, *Individuals’ Right under HIPAA to Access their Health Information* 45 CFR § 164.524, <https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/access/index.html> (discussing the obligation of medical professionals to transmit protected health information (“PHI”) to an app on a mobile phone or email it if the covered entity “has the capability to transfer the PHI in the requested manner and doing so would not present an unacceptable level of security risk to the PHI in the covered entity’s systems”). In the event that records are not available through normal means, patient-provided records can provide redundancy. See Dr. Bettina Experton, *Arming patients in an era of cyber attacks – using your mobile device to keep your data safe and under your control*, Humetrix Blog (May 16, 2017), <http://www.humetrix.com/post-be-37.html>.

Indeed, smartphone-accessible electronic health records are being embraced abroad. See *Public Notice* at 22 (*Issue 38*). “For countries that have been the most successful in making broadband-enabled health services and technology more widely available, especially in rural and underserved areas, we seek information on the approaches that such countries took....”. Australia and the United Kingdom (“U.K.”) are two examples. See Australian Digital Health Agency, *Frequency Asked Questions* (last updated May 16, 2017), <https://myhealthrecord.gov.au/internet/mhr/publishing.nsf/Content/find-out-more> (“You can

At CES 2017, CTA proudly recognized “Tech for a Better World” innovations related to health and wellness, such as the Yumii Cutii home services companion robot and the world’s first hearing aid – the Oticon Opn™ – that connects to the internet via the If-This-Then-That network.¹¹ Other examples of innovations at CES 2017 include:

- Samsung introduced the “S Skin,” which scans the user’s skin and measures for hydration, melanin, and redness in real-time. The S Skin pairs a micro-needle patch that is pressed on the user’s skin and will provide the appropriate nutrients to the skin based on the device’s evaluation with cameras, light sensors, and conductivity sensors.¹²
- Humetrix showcased its award-winning SOS QR app, iBlueButton mobile health platform, and TENSIO app. These technologies allow individuals and health care workers to monitor and analyze health information, and – if needed – send help and alerts.¹³
- TempTraq demonstrated a patch-like smart device, which continuously senses, records, and sends temperature data to mobile devices so caregivers can keep track without unnecessarily disturbing sick children.¹⁴
- IndependaTV developed a smart TV specifically designed for aging loved ones. The service offers medication reminders and health messages as well as video chat, photo sharing, personal messages.¹⁵

access your my Health Record from any compatible computer or mobile device with an internet connection.”); U.K., National Health Service, *Next steps on the NHS Five Year Forward View* 64 (Mar. 2017), <https://www.england.nhs.uk/wp-content/uploads/2017/03/NEXT-STEPS-ON-THE-NHS-FIVE-YEAR-FORWARD-VIEW.pdf>.

¹¹ CES 2017 Innovation Awards, <http://www.ces.tech/Events-Experiences/Innovation-Awards-Program/Honorees.aspx> (select “Tech For A Better World” from the drop-down menu) (last visited May 15, 2017); *Public Notice* at 20-21 (*Issue 30*. “How are broadband-enabled health technologies and medical devices currently being used by people with disabilities? To what extent can these technologies and devices address the health care needs of people with disabilities in the future?”).

¹² See TechnoloJ, CES 2017; Mat Smith, *Dr. Samsung tried to fix my face*, Engadget (Jan. 6, 2017), <https://www.engadget.com/2017/01/06/dr-samsung-tried-to-fix-my-face>.

¹³ See Press Release, Humetrix, At CES, Humetrix Shows Technology to Help Consumers Drive Needed Healthcare Reform (Jan. 5, 2017), http://humetrix.com/pr_2017_CES_LV.html; Press Release, FCC, Chairman Wheeler Honors Innovators in Accessible Communications Technology (Jun. 13, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-339781A1.pdf (recognizing SOS QR with the 2016 Chairman’s Awards for Advancement in Accessibility for emergency support for people with cognitive disabilities).

¹⁴ See Mesko, CES 2017; TempTraq, FAQ, <https://www.temptraq.com> (last visited May 16, 2017).

¹⁵ See Kendall, CES 2017.

Voluntary, Consensus-based standards. Enabling these advances are voluntary, consensus-based, global standards, which promote interoperability and provide a clearer path along which health and wellness technologies can evolve.¹⁶ CTA has been a leader in developing standards and guiding principles for years.

In early 2015, CTA began a process to establish a first-of-its-kind set of voluntary guidelines for private sector organizations that handle personal wellness data, which often is generated by wearable technologies. The process culminated in CTA's October 2015 announcement of the *Guiding Principles on the Privacy and Security of Personal Wellness Data*, which establish a baseline, voluntary framework to promote consumer trust in technology companies.¹⁷

Having published two wellness-related standards last year – ANSI/CTA/NSF-2052.1, *Definitions and Characteristics for Wearable Sleep Monitors* and ANSI/CTA-2056, *Physical Activity Monitoring for Fitness Wearables: Step Counting* – the CTA Technology and Standards Program is currently working on recommended performance metrics for sleep monitors, definitions and performance criteria for heart rate monitors, interoperability standards for handling electroencephalogram data, and definitions and characteristics for consumer stress

¹⁶ *Id.* at 11 (*Issue 4*. “What technical issues concerning the variety of broadband-enabled health care solutions and technologies are appropriate and necessary for the FCC to consider with respect to efforts to accelerate broadband adoption and promote health IT solutions? Are there issues of concern with respect to access, availability, interoperability, capacity, reliability, privacy, security, and speed? If so, please describe them. Does consideration of any of these issues vary depending on the technology platform—e.g., digital subscriber line (DSL), cable, fiber, wireless, or satellite?”) (footnotes omitted).

¹⁷ CTA, *Guiding Principles on the Privacy and Security of Personal Wellness Data* (Oct. 15, 2015), <https://fpf.org/wp-content/uploads/2015/10/CEA-Guiding-Principles-on-the-Privacy-and-Security-of-Personal-Wellness-Data-102215.pdf>; Press Release, CTA, Association Unveils First-of-Its-Kind, Industry Supported Principles on Wellness Data Privacy (Oct. 26, 2015), <https://www.cta.tech/News/News-Releases/Press-Releases/2015-Press-Releases/Association-Unveils-First-of-Its-Kind,-Industry-Su.aspx>.

monitors.¹⁸ Indeed, the next Technology & Standards Forum will feature a Health & Fitness Technology Summit.

II. BECAUSE THE INTERNET OF THINGS WILL BE AN IMPORTANT COMPONENT OF INNOVATIVE HEALTH AND WELLNESS APPLICATIONS, THE FCC SHOULD PROMOTE IOT DEVELOPMENT AND DEPLOYMENT

To continue to develop, deploy, and encourage consumer adoption of health and wellness products and services the IoT must develop robustly itself. The IoT (and the future internet, generally) require (i) a mixture of unlicensed and licensed spectrum across multiple bands; (ii) the availability of rich and diverse infrastructure; and (iii) consumer trust. The Commission can take measured actions to provide these building blocks while still promoting the innovation that will lead to further advances in health and wellness technologies for consumers.¹⁹

Spectrum. Spectrum fuels the IoT – whether to empower a local area network facilitating the operation of an in-home sensor or a licensed connection communicating smartphone app data to a hospital. CTA applauds the many positive steps that the Commission has taken to facilitate innovative use of previously underutilized spectrum for mobile broadband and other wireless services, and its effort to continue developing spectrum for commercial use. The conclusion of the Incentive Auction was an “important step in [the FCC’s] mission to release more spectrum for wireless broadband – a critical resource for the wireless industry as it continues to find new

¹⁸ Press Release, CTA, Health & Fitness Technology, Virtual Reality Summits to Headline CTA Technology & Standards Forum (Apr. 6, 2017), <https://cta.tech/News/Press-Releases/2017/April/Health-Fitness-Technology,-Virtual-Reality-Summi.aspx>; see also Active Aging Study at 58.

¹⁹ *Public Notice* at 10 (*Issue 3*. “We are also interested in learning how health technologies and services can take advantage of new technological applications and emerging communications networks. For example, what impact will the Internet of Things (IoT) have on broadband-enabled health technologies and services such as telehealth and telemedicine? To what extent will pervasive connectivity and a fully connected environment around individuals (e.g., IoT) shift the point of care delivery? How might the demands on broadband networks evolve in this new environment? What, if any, changes are anticipated in existing broadband-enabled health services and technologies—operating over current mobile networks—when 5G (Fifth Generation Mobile and Wireless Networks) becomes available? To what extent might telehealth and telemedicine be impacted by the availability of 5G networks? What medical device innovations are anticipated to be developed using 5G networks?”).

and innovative ways to meet consumers’ growing demand for anytime, anywhere connectivity.”²⁰

However, the Commission cannot rest on its laurels, and CTA looks forward to seeing new, innovative solutions from the federal government to free up access to this much-needed resource.

Infrastructure. Rapid, streamlined infrastructure deployment is essential for innovative development of the future internet. Without sound infrastructure policies, making spectrum available for commercial use is a necessary, but not sufficient, ingredient for the ubiquitous connectivity that will fuel the future internet, including the many wireless sensors and connected devices of the IoT. Common-sense siting policies will protect consumers, governments, *and* innovation. The FCC should encourage states and localities to adopt smart and light-touch regulatory policies and procedures that will streamline and promote infrastructure siting – but should take more direct action if necessary.²¹

*Privacy/cybersecurity.*²² At a fundamental level, health and wellness technologies rely on collecting and sharing information, including some of a person’s most sensitive data. Consumers must trust these applications and devices to adopt and use them. CTA members take seriously the need for consumer trust. Industry-wide, consensus-driven self-regulation works well to address these issues. Self-regulatory regimes have worked well to ensure consumer privacy and foster innovation. The technology market is fiercely competitive, and consumers will not purchase products if they do not trust a manufacturer’s or provider’s handling of data. A

²⁰ Press Release, CTA, CTA Applauds the FCC on Close of TV Broadcast Spectrum Incentive Auction (Apr. 13, 2017), <https://cta.tech/News/Press-Releases/2017/April/CTA-Applauds-the-FCC-on-Close-of-TV-Broadcast-Spec.aspx> (quoting CTA President and CEO Gary Shapiro).

²¹ See, e.g., Comments of CTA, WT Docket No. 16-421 (Mar. 8, 2017).

²² *Public Notice* at 19 (*Issue 25*. “To what extent do safety, security, reliability, and privacy concerns influence adoption of broadband-enabled health services and other advanced technologies?”).

recent survey demonstrated that 90 percent of Americans are willing to share wearable data with healthcare providers.²³

Joint public/private efforts on cybersecurity provide a clear example of success across industries sectors and government agencies with important guidance documents like the NIST Cybersecurity Framework for Critical Infrastructure, the Sector Coordinating Councils, the FCC's Communications Security, Reliability and Interoperability Council, NTIA multistakeholder processes, and the industry's own Building Security in Maturity Model tool.²⁴ Cybersecurity issues are being addressed in a multi-layered fashion, with industry consistently taking a lead in shaping the discussion. In this regard, CTA applauds the President's recent cybersecurity executive order, and looks forward to continuing its efforts to strengthen critical infrastructure in the United States.²⁵

III. THE CVAA ACCESSIBILITY REGIME AS IMPLEMENTED BY THE COMMISSION ROBUSTLY SUPPORTS HEALTH AND WELLNESS PRODUCTS

The Commission is to be commended for its comprehensive implementation of the CVAA.²⁶ Working within the framework created by the CVAA – which CTA helped shape –

²³ See, e.g., Accenture Consulting, Accenture 2016 Consumer Survey on Patient Engagement, U.S. Report at 21 (2016), https://www.accenture.com/t20160629T045303_w_us-en_acnmedia/PDF-6/Accenture-Patients-Want-A-Heavy-Dose-of-Digital-Research.pdf.

²⁴ See CTA, *Internet of Things: A Framework for the Next Administration* (Nov. 2016), <http://www.cta.tech/cta/media/policyImages/policyPDFs/CTA-Internet-of-Things-A-Framework-for-the-Next-Administration.pdf>.

²⁵ See CTA, *CTA Applauds President Trump's Cybersecurity Executive Order* (May 12, 2017), <https://www.cta.tech/News/Press-Releases/2017/May/CTA-Applauds-President-Trump-s-Cybersecurity-Execu.aspx>.

²⁶ See *Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010*, Biennial Report to Congress as Required by the Twenty-First Century Communications and Video Accessibility Act of 2010, 27 FCC Rcd 12204 ¶ 2 (CGB 2012) (observing that the Commission had released five reports and orders adopting rules to implement various provisions of the CVAA); *Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010*, Biennial Report to Congress as Required by the Twenty-First Century

industry has increased the accessibility of many, if not most consumer technology products used for health and wellness and the underlying technologies, many of which rely on broadband.²⁷

The Commission’s accessibility rules already benefit users of health and wellness applications and products by making them more accessible.²⁸ Various rules require manufacturers and service products to consider accessibility in the design and development of their products and services.²⁹ Other rules establish substantive accessibility requirements that will promote accessibility for health and wellness.

For example, smartphones are commonly used to access health and wellness apps.³⁰ Smartphones themselves are commonly subject to several different accessibility regimes, such as the user interface rules for digital apparatus.³¹ These rules ensure that key features and product

Communications and Video Accessibility Act of 2010, 29 FCC Rcd 11909 n. 7 (CGB 2014); *Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010*, Biennial Report to Congress as Required by the Twenty-First Century Communications and Video Accessibility Act of 2010, 31 FCC Rcd 11065 Appendix B (CGB 2016) (describing Commission actions to implement the CVAA since the 2014 Biennial Report).

²⁷ *Public Notice* at 21 (*Issue 31*. “We seek comment on whether the design and development of broadband-enabled health services and technologies, as well as cutting-edge health and medical devices and applications, are accessible to, and usable by, people with disabilities. Are there practical concerns or other issues that are inhibiting or limiting the use and availability of broadband-enabled health services and technologies for people with disabilities? How are hospitals and clinicians currently addressing, if at all, any of these issues? An increasing number of health care services provide patient portals for patients to access medical records and communicate with physicians and specialists. What measures are taken to ensure that these mechanisms are fully accessible to users with disabilities (e.g., accessible via screen readers used by individuals who are blind)?”).

²⁸ To the extent that there are accessibility issues for products or services not covered by the CVAA, the Commission may not have authority to adopt additional accessibility requirements under current laws.

²⁹ *See, e.g.*, 47 C.F.R. §§ 6.7; 7.7; 14.20(b); 79.107(d)(3)(iv); 79.108(f)(3)(iv).

³⁰ *See Active Aging Study*, passim (describing many health and wellness apps).

³¹ *See Accessibility of User Interfaces, and Video Programming Guides and Menus; Accessible Emergency Information, and Apparatus Requirements for Emergency Information and Video Description: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010*, Report and Order and Further Notice of Proposed Rulemaking, 28 FCC Rcd 17330 ¶ 28 (2013) (determining that smartphones without MVPD applications pre-installed by the manufacturer are digital apparatus).

support are accessible to and usable by individuals with disabilities.³² Likewise, the Consumer and Governmental Affairs Bureau has identified several accessibility solutions that industry is incorporating into products, including health and wellness technologies, to reduce accessibility barriers.³³

IV. CONCLUSION

CTA looks forward to continuing to work with the Commission to enhance the availability and adoption of broadband-enabled health and wellness technologies

Respectfully submitted,

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³² 47 C.F.R. §§ 79.107; 79.109.

³³ FCC Consumer and Governmental Affairs Bureau, *Individuals with Cognitive Disabilities: Barriers to and Solutions for Accessible Information and Communication Technologies*, White Paper, 26-33 (Oct. 6, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-341628A1.pdf (observing that technologies allow remote caregivers to monitor “user’s success at each task performed, and provide guidance where necessary,” “can remind users to brush their teeth,” and more).